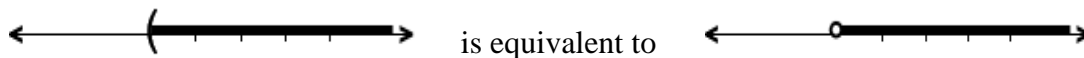# Using Set Builder and Interval Notation
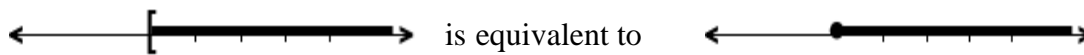
Symbols used in Set Builder and Interval Notation

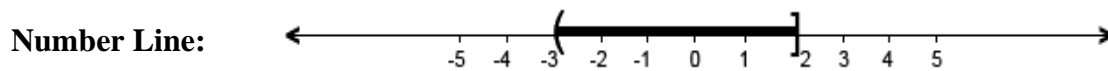| To Show	Set Builder	Interval
Less than	<	)
Greater than	>	(
Less than or Equal to	≤	]
Greater than or Equal to	≥	[
Union	or	∪
Intersection	and	∩

To exclude a number on a number line use a parenthesis or an open circle.

  is equivalent to

To include a number on a number line use a bracket or a closed circle.
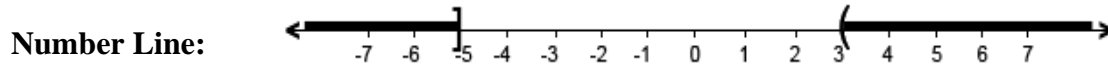
  is equivalent to

Example 1: Show all real numbers between -3 and +2, with -3 excluded and 2 included.

Number Line:

Set Builder Notation: $\{x \mid -3 < x \le 2\}$

Interval Notation: $(-3, 2]$

Example 2: Show all numbers less than or equal to – 5, or greater than +3.

Number Line:

Set Builder Notation: $\{x \mid x \le -5 \textbf{ or } x > 3\}$

Interval Notation: $(-\infty, -5] \cup (3, \infty)$

NOTE: Use parenthesis with -∞ and +∞